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United States Department of Agriculture,

DIVISION OF ENTOMOLOGY,
L. O. Howard, Entomologist.

THE PERIODICAL CICADA IN 1902.

The present season will witness the occurrence of one of the largest known broods of the periodical cicada (*Cicada septendecim* Linn., fig. 1). Aside from its extended range, this brood, designated as Number X (Marlatt's notation), attracts especial attention by reason of the fact that it has been observed and recorded at regular intervals of seventeen years since 1715. In all seventeen States, many of which are important fruit-producing ones, will be concerned. It is well known that the adults of this insect deposit their eggs in incisions they make in the tender twigs of trees and shrubs. The damage, sometimes amounting to the actual destruction of newly transplanted young trees, that is thus caused, makes this occurrence one of considerable economic importance. In fact, though the degree of danger depends somewhat upon the location of the orchard as regards the proximity of woods, any young trees transplanted this spring in the region where the cicada will appear are likely to be somewhat seriously affected. These regions are marked upon the accompanying map (fig. 2), and are indicated accurately, as far as known, by counties in the following list. It should be understood that in these localities the settlement of the country has had a strong effect toward breaking up the swarms into isolated portions. Consequently, in many places where cicadas emerged thirty-four years ago none may be seen this year. Persons contemplating the setting out of orchards should therefore ascertain from old residents whether the insects appeared in the immediate vicinity seventeen years ago. If this is the case, it is by all means advisable to defer the transplanting of trees till fall, or, if the climate does not permit fall-planting, until

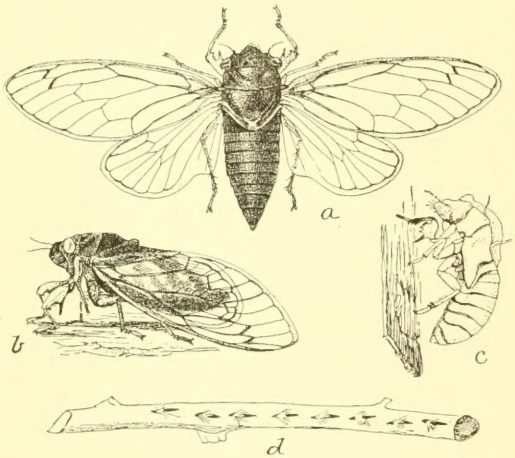

FIG. 1.—*a*, *Cicada septendecim*, adult; *b*, same, side view; *c*, shed pupal skin; *d*, twig showing egg punctures—natural size (original).

the spring of 1903. In orchards the less pruning done this spring the less will be the damage the trees are likely to suffer, as this operation tends to concentrate the punctures by leaving little new growth. Likewise, wherever convenient, budding and grafting, which cause favorable places for the deposition of eggs, should be avoided.

AN EXCEPTION.

In the Connecticut valley there is a limited region where Brood XI (Marlatt's notation) will appear during the spring of 1903. This locality, which is the only one in the United States where swarms of cicadas will appear that year, includes only Hartford County in

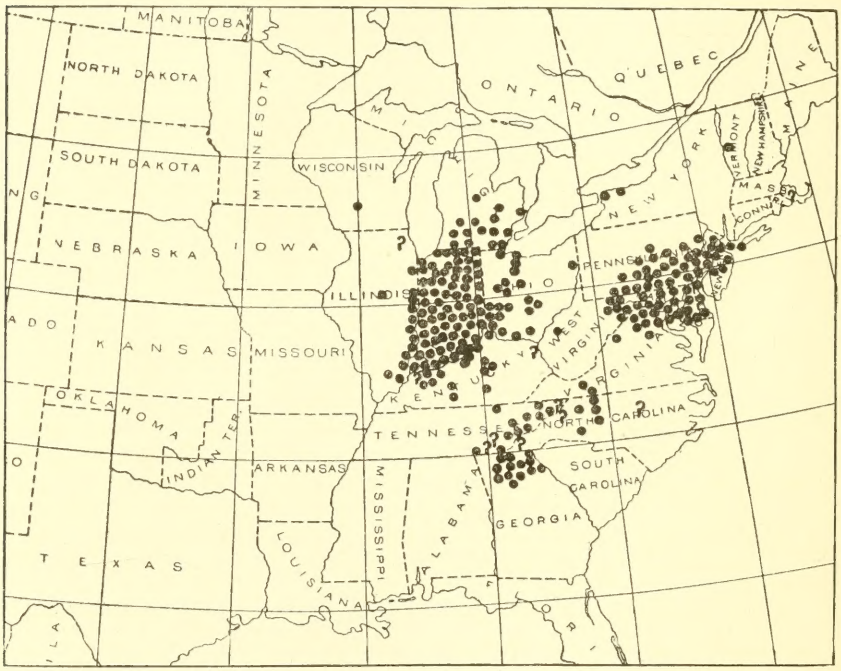

FIG. 2.—Distribution of Brood X, 1902 (from Marlatt).

Connecticut and Bristol, Franklin, and Hampshire counties in Massachusetts. This brood has become scattered and is rapidly dying out. In 1886 it attracted but little attention and in 1903 will be still less in evidence. However, in places where the insects are known to have appeared in numbers in 1886 in the counties mentioned above it will be unwise to transplant trees extensively in the spring of 1903. In all other portions of the United States the year 1903 will be, as far as the periodical cicada is concerned, very favorable for tree planting, because it will be followed by a year in which, as far as is definitely known, there will be a total absence of swarms of this insect.

STATES AND COUNTIES WHERE SWARMS OF CICADAS WILL APPEAR IN MAY, 1902.

Alabama.—St. Clair (?).

Delaware.—Kent, Newcastle, Sussex.

District of Columbia.—Throughout.

Georgia.—Banks, Dawson, Fannin, Forsyth, Franklin, Gilmer, Habersham, Hall, Lumpkin, Pickens, Rabun, Union, White.

Illinois.—Clark, Crawford, Dewitt, Edgar, Edwards (?), Gallatin, Iroquois (1868), Kane (?), Lawrence, Pope, Vermillion, Wabash, White, Williamson (perhaps Brood XXIII, Marlatt's notation).

Indiana.—Entire State except Howard, Marshall, Ohio, Porter, Pulaski, and Starke counties.

Kentucky.—Barren, Breckinridge, Carroll, Casey, Daviess, Fayette (?), Franklin, Hart (?), Henderson (?), Jefferson, Kenton, Lawrence (?), McLean, Meade, Mercer (1868), Ohio, Oldham, Trimble.

Maryland.—Alleghany, Anne Arundel, Baltimore, Caroline, Carroll, Cecil, Frederick, Garrett, Harford, Howard, Kent, Montgomery, Prince George, Queen Anne, Talbot, Washington.

Massachusetts.—Bristol (?).

Michigan.—Barry, Branch, Calhoun, Eaton, Genesee, Gratiot, Jackson, Kalamazoo, Lenawee, Livingston, Monroe, St. Clair, St. Joseph, Washtenaw, Wayne.

New Jersey.—Burlington, Camden, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Passaic (?), Somerset.

New York.—Kings, Monroe, Niagara, Richmond.

North Carolina.—Caldwell (?), Cherokee (?), Davie, Lincoln (1834), Surrey, Wake (?), Wilkes, Yadkin.

Ohio.—Adams, Butler, Champaign, Clark, Clermont (?), Columbiana, Delaware, Fairfield, Franklin, Greene, Hamilton, Lucas, Miami, Montgomery, Pickaway, Pike, Preble, Sandusky, Seneca, Warren, Wyandot.

Pennsylvania.—Adams, Bedford, Berks, Blair, Bucks, Carbon, Chester, Cumberland, Dauphin, Delaware, Franklin, Fulton, Huntington, Juniata, Lancaster, Lebanon, Lehigh, Mifflin, Monroe, Montgomery, Northampton, Perry, Philadelphia, Schuylkill, Snyder, Somerset, Union, York.

Tennessee.—Blount, Carter, Hamblen, Hamilton, James (?), Johnson (?), Knox, Loudon, McMinn (?), Polk, Scott, Sevier, Sullivan, Washington.

Vermont.—Rutland.

Virginia.—Alexandria, Augusta, Carroll, Clarke and adjoining counties, Fairfax, Frederick, Loudoun, Spottsylvania (?), Warren, Wythe.

West Virginia.—Berkeley, Grant, Hardy, Hampshire and adjoining counties, Jefferson and adjoining counties, Mineral, Morgan, Putnam (?).

Wisconsin.—Sauk.

TIME OF APPEARANCE.

Though there is a little variation with the seasons, the experience of many years indicates that over the major portion of its range the bulk of the individuals of this brood will emerge from the ground during the last week in May. In Georgia and the other more southern States concerned, the time will be a trifle earlier, perhaps from the fifteenth to the twentieth of May. Naturally, however, in

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any locality, a few individuals are apt to emerge some days ahead of the main swarm, and likewise some few may be retarded until early in June.

A REQUEST.

It has been the policy of this Division for many years to collect data concerning each of the several broods of this insect, with the object of eventually obtaining a basis for an accurate statement from time to time, for the benefit of fruit growers, of exactly what localities in the country will be visited by its swarms. An exceptional opportunity to more accurately determine the limits of Brood X (Marlatt) occurs this year by reason of the fact that no other broods will make their appearance in conjunction with it. At its last appearance, in 1885, this brood was associated with the thirteen-year brood, known as XXIII (Marlatt). In many districts where the territories occupied by the two were adjacent or overlapped, it was naturally impossible to assign individuals to one or the other. Likewise in 1868, the simultaneous emergence of the thirteen-year brood known as XIX (Marlatt), which will not happen again until the year 2089, caused some confusion along the Southern and Western borders. The present season, however, no such complications exist.

Persons who receive this circular will, therefore, be able to materially assist the Division by sending information as to whether swarms do or do not appear in their locality. Such information from the outlying portions of the known range and from the counties followed by interrogation marks in the preceding list is especially desired. A large number of reports, however, from within the territory known to be infested will be scarcely less valuable, because they will throw light upon the effect that the settlement of the country, the building of towns, and the removal of forests have had upon the insect.

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Approved:
JAMES WILSON,
Secretary.

WASHINGTON, D. C., *March 13, 1902.*

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